

Appendix A

Biological Assessment/Screening Level Risk Assessment/ Biological Opinion

Introduction

This appendix has been prepared by the U.S. Department of Energy (DOE) to comply with requirements set forth in Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) and the National Environmental Policy Act (NEPA) (40 CFR 1502.25). It includes the following documents:

- Biological Assessment, including DOE's determinations ([Appendix A1](#))
- A screening-level risk assessment ([Appendix A2](#))
- The U.S. Fish and Wildlife Service (USF&WS) Biological Opinion ([Appendix A3](#))

This appendix addresses the potential effects of remediation alternatives on listed threatened and endangered species and on critical habitat for the Moab, Utah, Uranium Mill Tailings Radiation Control Act (UMTRCA) site. The alternatives are discussed in detail in the *Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah, Draft Environmental Impact Statement* (DOE/EIS-0355D). The analyses focus on contaminated ground water that is currently affecting the Colorado River. The alternatives evaluated in the environmental impact statement (EIS) address both surface remediation and ground water remediation under the proposed on-site and off-site disposal alternatives. All alternatives except the No Action alternative would include active ground water remediation at the Moab site, because this medium presents the greatest potential to adversely affect threatened and endangered aquatic species. Less emphasis is placed in this appendix on terrestrial species, because preliminary investigations and consultations do not indicate an imminent adverse effect to threatened and endangered terrestrial species for any of the proposed disposal cell locations.

Background

In 1978, Congress passed UMTRCA, 42 U.S.C. §§ 7901 et seq., in response to public concern regarding potential health hazards of long-term exposure to radiation from uranium mill tailings. Title I of UMTRCA requires DOE to establish a remedial action program and authorizes DOE to stabilize, dispose of, and control uranium mill tailings at 24 uranium-ore processing sites and associated vicinity properties (properties where uranium mill tailings were used as construction or fill material before the potential hazards associated with this material were known). In October 2000, the Floyd D. Spence National Defense Authorization Act (Floyd D. Spence Act) for fiscal year (FY) 2001 (Public Law 106–398) added the Moab site to the list of UMTRCA Title I sites and gave DOE responsibility for remediation of the site.

Prior to its transfer to DOE, the site had been owned and operated by the Uranium Reduction Company and later the Atlas Minerals Corporation under a license issued by the U.S. Nuclear Regulatory Commission (NRC). The processing facility no longer operates and has been dismantled except for one building that is currently used by DOE for maintenance and storage space. During its years of operation, the facility accumulated approximately 11.8 million tons of uranium mill tailings. Uranium mill tailings are the naturally radioactive residue from the processing of uranium ore. The tailings at the Moab site contain constituents that have contaminated the nearby soil and ground water at levels that exceed U.S. Environmental Protection Agency (EPA) standards in 40 CFR 192, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings."

Decommissioning of the mill began in 1988, and an interim cover was placed on the tailings pile between 1989 and 1995. In 1996, Atlas submitted a reclamation plan and an application to NRC for an amendment to its existing NRC license (No. SUA-917) to allow for reclamation of the site. In May 1994, USF&WS provided comments to NRC on its Notice of Intent to prepare an EIS for site reclamation, stating concerns that included water depletion and contaminant effects on endangered fish. A biological assessment was prepared in 1995 and supplemented in 1997. USF&WS issued a Final Biological Opinion in 1998. The opinion was based on a proposed action of stabilizing the contaminated materials in place, and it concluded that continued leaching of existing concentrations of ammonia (and other constituents) would jeopardize the continued existence of endangered fish species in the Colorado River. In addition, depletion of Colorado River water (associated with remedial actions) would jeopardize four endangered species. The action would also affect critical river habitat for the razorback sucker and Colorado pikeminnow. In its Final Biological Opinion, USF&WS proposed mitigative measures that would be protective of endangered fish species and critical habitat. Because USF&WS considered ground water remediation an “interrelated action,” the opinion included a request for an expedited ground water compliance action plan. DOE is addressing ground water remediation within the scope of the EIS.

Stakeholders, including federal and state agencies, have expressed concern that elevated levels of site-related ground water contaminants, primarily ammonia, are reaching the Colorado River. The USF&WS and Utah Division of Wildlife Resources (UDWR), among others, are concerned because the segment of the Colorado River near the Moab site is also designated critical habitat for four endangered fish species. The Columbia Environmental Research Center of the U.S. Geological Survey conducted a study in 1998. The study was updated in 2002 and concluded that ammonia concentrations entering the river from the Moab site may present a risk to endangered fish species (USGS 1999, 2002). The study also concluded that current Utah surface water quality standards for ammonia would be protective of fish species. DOE has identified, through a screening level risk assessment, four other contaminants of concern that could adversely affect aquatic receptors; manganese, copper, sulfate, and uranium. Appendix A2 summarizes the analyses that identified these contaminants of potential concern.

By letter dated February 8, 2001, during transition of ownership of the site to DOE, USF&WS withdrew its Biological Opinion pending additional consultation. Since acquiring the site, DOE has undertaken informal consultation and short-term actions to mitigate impacts to endangered fish. In 2002, 2003, and 2004, DOE consulted with USF&WS to implement initial and interim actions that are anticipated to reduce the influence of contamination on designated critical habitat. These actions are discussed in more detail in the attached Biological Assessment (BA).